INTRODUCTION

In 1973, the gray wolf (*Canis lupus*) was listed under the Endangered Species Act (ESA) and protected as an endangered species in the continental U. S. The USFWS is mandated to recover federally listed species, including gray wolves. In the early 1980s, individual wolves, naturally dispersing from Canada, recolonized portions of northwest Montana near Glacier National Park. The first USFWS wolf recovery plan was developed through interagency cooperation in 1987 (USFWS 1987). The 1987 plan called for establishing 3 northern Rocky Mountain wolf recovery areas: northwest Montana (NWMT), the greater Yellowstone Area (GYA) predominantly in Wyoming, and central Idaho (CID). The plan called for natural recovery in northwestern Montana and reintroductions of wolves into Yellowstone National Park and central Idaho. Following the guidelines of the 1987 plan, the USFWS developed an Environmental Impact Statement (EIS) for the reintroduction of gray wolves into Yellowstone National Park and central Idaho (USFWS 1994). The EIS designated the GYA and CID recovery areas as Nonessential Experimental Population Areas and called for reintroductions of wolves as nonessential experimental populations, a lesser protective classification under section 10(j) of the ESA, to facilitate wolf management and conflict resolution. The Secretary of Interior approved the final EIS in 1994. In 1995 and 1996, 66 wolves were captured in Alberta and British Columbia, Canada, respectively; 31 of which were reintroduced into Yellowstone National Park and 35 into central Idaho.

Also in 1994, the USFWS developed a Final Rule, which provided management guidelines for recovering nonessential experimental wolf populations in the GYA and CID recovery areas. These guidelines differed somewhat from federal guidelines for fully endangered wolves in the NWMT recovery area. The state of Idaho contains portions of all 3 northern Rocky Mountain recovery areas (Figure 1). Wolves south of Interstate Highway 90 (I-90) are classified as nonessential experimental and are managed according to the provisions of the Final Rule. Wolves north of I-90 are classified and managed under a fully endangered ESA classification.

Efforts between the State of Idaho and the USFWS to develop a state wolf recovery plan were terminated in 1995 when the state legislature rejected a draft plan and prevented the IDFG from engaging in wolf recovery activities. In 1995, the NPT completed, and the USFWS approved, the "Wolf Recovery and Management Plan for Idaho", providing the mechanism for the USFWS to enter into a Cooperative Agreement with the NPT to recover and manage wolves in the CID recovery area. Wildlife Services (WS) also became partners with the USFWS to assist in investigating depredations and implementing wolf control actions in response to wolf-livestock conflicts.

In March 2002, the Idaho Legislature accepted and passed the Idaho Wolf Conservation and Management Plan (http://fishandgame.idaho.gov/cms/wildlife/wolves/wolf_plan.pdf). In April 2003, the Legislature passed House Bill 294, allowing the state to participate in wolf management, and IDFG to assist the Governor's Office of Species Conservation in implementing the State of Idaho's Wolf Conservation and Management Plan as well as participate in wolf management with the USFWS and the NPT.

In 2003 and 2004, IDFG participated in wolf management in cooperation with other governments and agencies. The IDFG also started to develop a statewide program in preparation for overseeing wolf management in Idaho. Wolves were monitored and managed under cooperative agreements and work plans between cooperating governments and agencies.

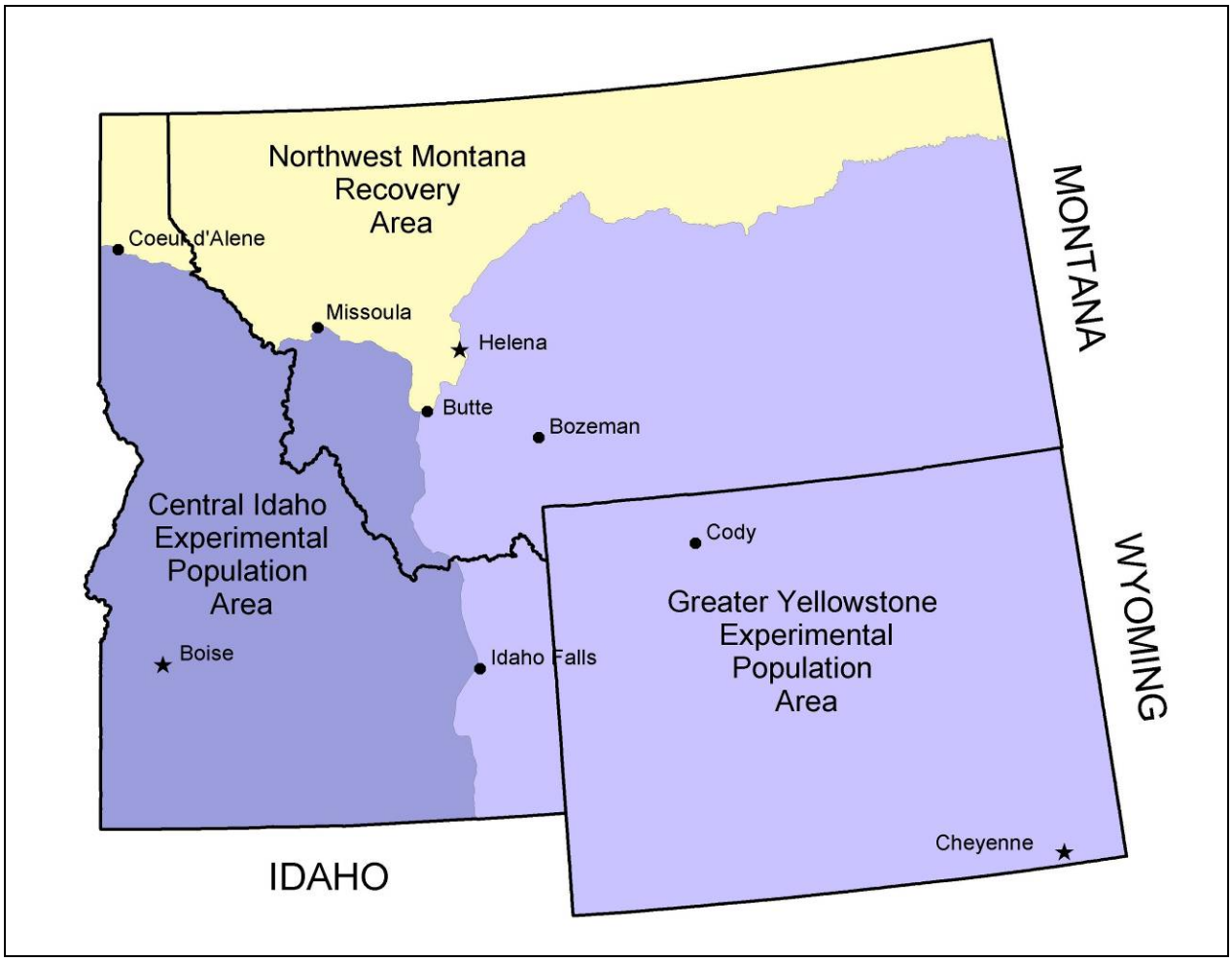

Figure 1. Recovery areas established by the U.S. Fish and Wildlife Service to restore gray wolf populations in the northern Rocky Mountains of Idaho, Montana, and Wyoming. Wolves are naturally recovering in the Northwest Montana Recovery Area, while wolves were reintroduced into the Central Idaho and Greater Yellowstone Experimental Population Areas.

The established northern Rocky Mountain population recovery goal of 30 breeding pairs of wolves well distributed throughout the 3 states of Idaho, Montana, and Wyoming for 3 consecutive years was achieved in December 2002 (USFWS et al. 2003). In 2003, the USFWS adopted regulations that reclassified, or down-listed, wolves from endangered to threatened in Idaho north of I-90; however, in early 2005, a federal court judge remanded these regulations. Consequently, wolves north of I-90 remained classified as fully endangered.

The ultimate goal of federal, state, and tribal governments is to recover and remove wolves from the protections of the ESA (delisting process). The USFWS initiated the delisting process when the northern Rocky Mountain wolf population met or exceeded established population goals, and the 3 states of Idaho, Montana, and Wyoming each had USFWS-approved wolf management plans and other legislation and regulations in place to ensure long-term conservation of wolves. By 2003, most federal delisting requirements had been met. Wolf population recovery goals were met in 2002 and the states of Idaho and Montana had USFWS-approved wolf management

plans and adequate state laws in place. Wyoming's wolf management plan, however, was not approved by the USFWS. In response, Wyoming sued the federal government requesting court approval of their plan. Consequently, delisting was delayed until Wyoming made USFWS-requested adjustments to its plan, which occurred in late 2007.

In response to this delay, in February 2005, the USFWS revised the Final Rule (10(j) Rule). The new 10(j) Rule (Endangered and Threatened Wildlife and Plants; Regulation for Nonessential Experimental Populations of the Western Distinct Population Segment of the Gray Wolf [50 CFR Part 17.84]) applies only within the Nonessential Experimental Population Areas for states with USFWS-approved wolf management plans; currently Idaho and Montana (Figure 2). The 10(j) Rule is an interim measure to provide Idaho and Montana with more local wolf management authorities until wolves can be delisted.

The 10(j) Rule allowed the states of Idaho and Montana to petition the Department of Interior to assume many day-to-day wolf management authorities. In January 2006, a MOA between the Secretary of Interior and the Governor of Idaho was signed that transferred most management authorities previously held by the USFWS to Idaho. The State of Idaho currently oversees daily management of wolves in Idaho and coordinates between agencies to fulfill obligations under the 10(j) Rule, the ESA, and the state wolf management plan. The USFWS developed a new 10j rule and filed it in the Federal Register in January 2008. It will take effect in February 2008. The primary changes in the rule allow: 1) the public to kill a wolf attacking their dog or livestock on public land, and 2) more flexibility for states or tribes to kill wolves that are impacting big game populations.

In May 2005, an MOA was signed between the NPT and State of Idaho that outlined wolf monitoring and management responsibilities shared between the 2 governments. Under the MOA, the NPT is responsible for monitoring wolves within IDFG Clearwater Region and McCall Subregion, while the State of Idaho is responsible for monitoring wolves across the rest of the state and management statewide.

In February 2007, the USFWS proposed a delisting rule that would provide 2 alternate tracks to delisting. If Wyoming's plan was made acceptable and court cases resolved, the 3 states would be delisted simultaneously. Alternatively, if Wyoming did not provide adequate regulatory mechanisms including an acceptable plan, the USFWS would delist wolves in Montana, Idaho and most of Wyoming, but leave them listed in northwest Wyoming surrounding Yellowstone and Grand Teton National Parks. Wyoming and USFWS agreed upon a final plan in late 2007 and delisting is proceeding with a posting date of February 28, 2008 anticipated. Litigation is also anticipated that may delay implementation of state plans.

In preparation for delisting, IDFG prepared a Wolf Population Management Plan which aims to stabilize the wolf population between 2005 and 2007 levels and is designed to manage conflicts between wolves and human interests. It also provides for wolf harvest opportunities and non-consumptive enjoyment of wolves. The final version of this plan is expected to be approved by the IDFG commission in March 2008.

This report fulfills annual USFWS requirements to summarize and report wolf status and management activities in Idaho. The goal of the State of Idaho, NPT, USFWS, and WS is to continue to maximize knowledge of wolves in Idaho while reducing conflicts and continuing toward eventual delisting of wolves in the northern Rocky Mountains.

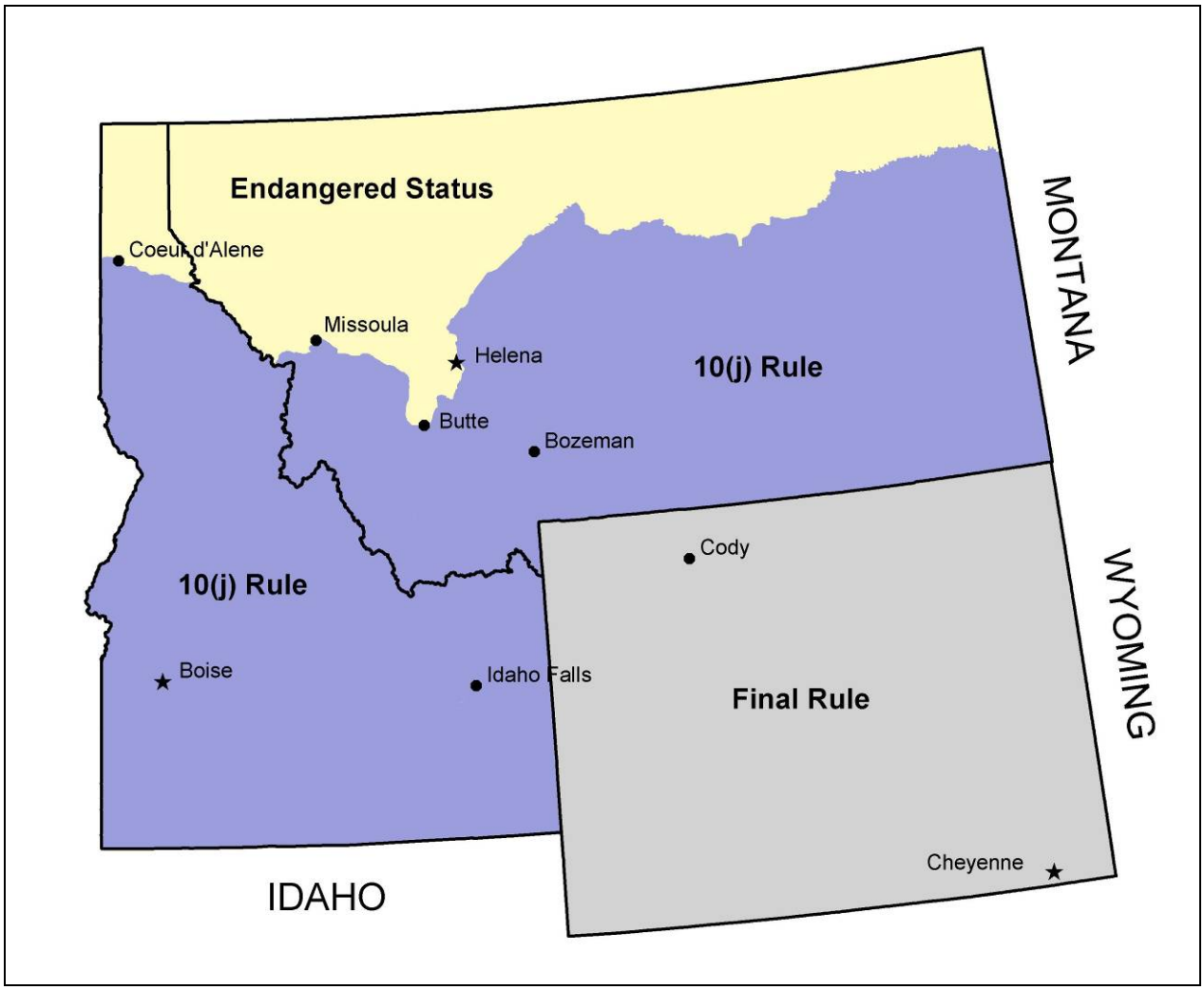

Figure 2. Management areas established by the U.S. Fish and Wildlife Service under the 10(j) Rule to restore gray wolf populations in the northern Rocky Mountains of Idaho, Montana, and Wyoming.

STATEWIDE SUMMARY

Previous progress reports by the NPT and the USFWS summarized wolf status within the CID recovery area including central Idaho and portions of southwestern Montana. However, this report summarizes the status of wolves and wolf management within the borders of the State of Idaho, including portions of all 3 northern Rocky Mountain recovery areas; endangered wolves in the NWMT recovery area north of I-90, and nonessential experimental wolves within Idaho portions of the CID and GYA recovery areas south of I-90.

Central Idaho, a vast, mountainous, and remote area, is one of the largest remaining undeveloped blocks of public land in the conterminous U. S. Central Idaho includes 3 contiguous Wilderness Areas, the Selway-Bitterroot, Frank Church River-of-No-Return, and Gospel Hump, encompassing almost 4 million acres (1.6 million ha), which represents the largest block of federally-designated Wilderness in the lower 48 states. Three major mountain chains and 2 large river systems create a very diverse landscape, ranging from sagebrush-covered flatlands in the

southern part of Idaho, to extremely rugged peaks in the central and northern parts. A moisture gradient also influences the habitats of both wolves and their prey, with wetter maritime climates in the north supporting western red cedar (*Thuja plicata*)-western hemlock (*Tsuga heterophylla*) vegetation types, grading into continental climates of Douglas-fir (*Pseudotsuga menziesii*) and Ponderosa pine (*Pinus ponderosa*) to the south. Elevations vary from 1,500 feet (457 m) to just over 12,000 feet (3,657 m). Annual precipitation varies from less than 8 inches (20 cm) at lower elevations to almost 100 inches (254 cm) at upper elevations.

Wolf Population Status

The Idaho wolf population has continued to expand in both numbers and packs since initial reintroductions in 1995 (Figures 3 and 4). By the end of 2007, 83 documented wolf packs remained extant in Idaho, including 17 newly documented packs, and a minimum of 489 wolves was observed or monitored by wolf program personnel. The minimum population estimate was 732 (Appendix A).

Distribution, Reproduction, and Population Growth

Wolves were well distributed in the state from the Canadian border, south to the Snake River Plain, and east to the Montana and Wyoming borders (Figure 5). Of the 83 documented packs during 2007, territories of all were predominantly on U.S. Forest Service (USFS) public lands.

Of 83 documented packs, a minimum of 59 produced litters and 43 qualified as breeding pairs (Table 1). A minimum of 200 wolf pups was documented in 2007. Wolf pup counts were conservative estimates because not all pups were observed from packs that were monitored, and some documented packs were not visited. Minimum documented litter sizes ranged from 1-8 pups. Average minimum litter size for those packs where counts were believed complete (n = 35) was 4.1 pups per litter. Ten new breeding pairs were documented and the reproductive status of 24 documented packs was either not verified or believed to be non-reproductive during 2007. Many areas typically visited to count pups were not available to field crews due to extensive forest fires and subsequent area closures this year.

The estimated wolf population increased 9% between 2006 (n = 673) and 2007 (n = 732) (Fig. 3). The social carrying capacity for wolves will likely be below the biological carrying capacity as wolves are managed in concert with other wildlife values, livestock concerns, and management objectives. Ultimately the citizens of Idaho, not habitat, will determine the number of wolves that will persist in the state.

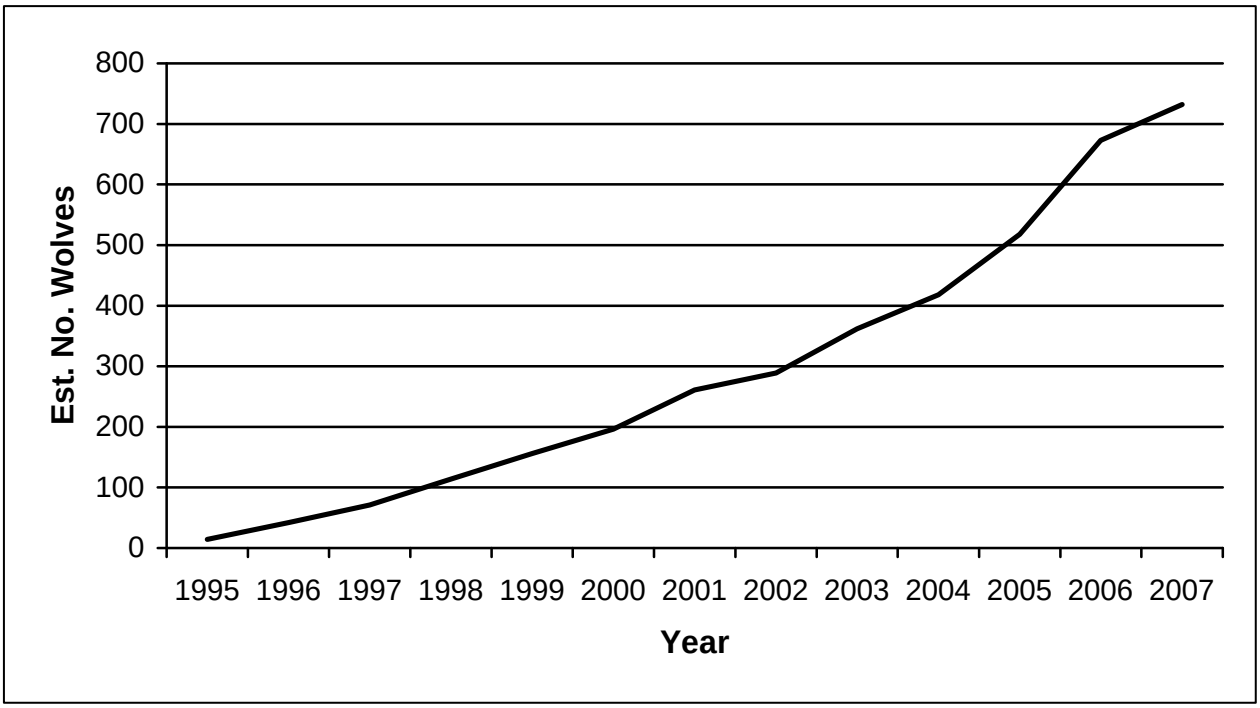

Figure 3. Estimated number of wolves in Idaho, 1995-2007. Annual numbers were based on best information available and were retroactively updated as new information became available.

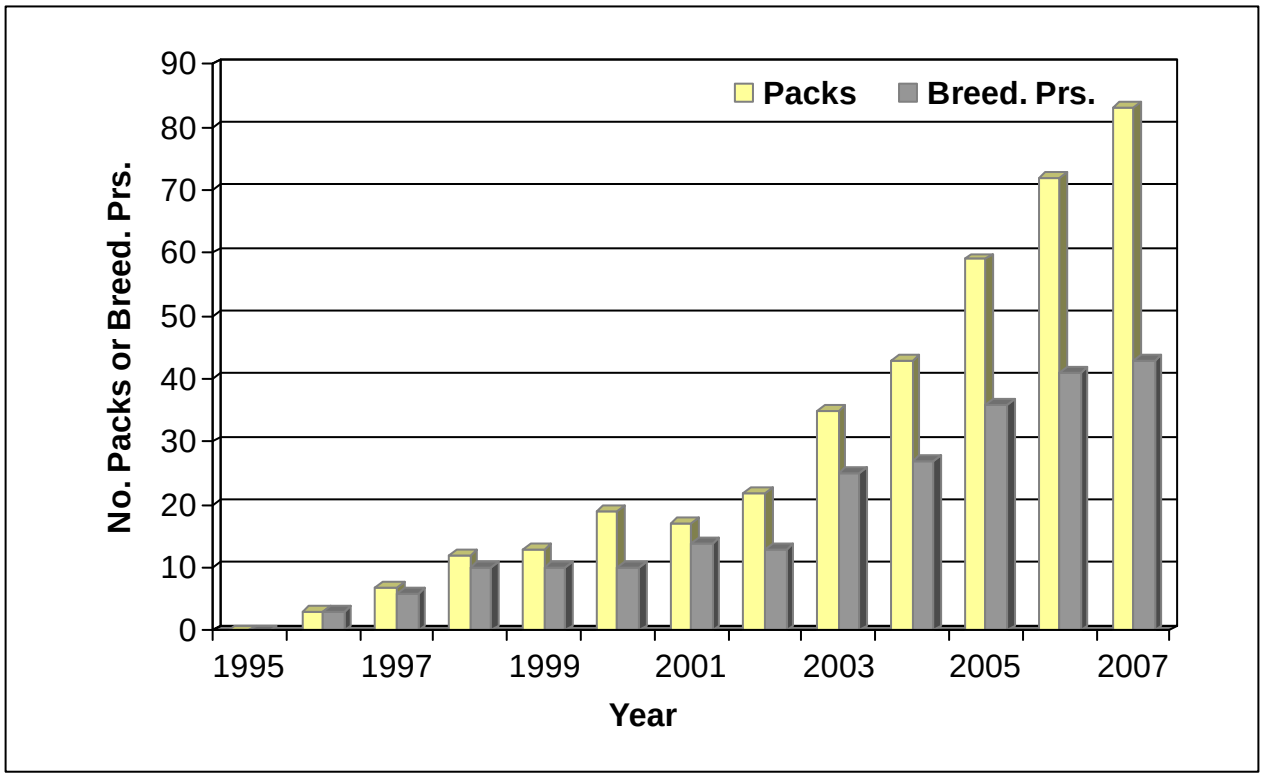

Figure 4. Number of documented wolf packs and breeding pairs in Idaho, 1995-2007. Annual numbers were based on best information available and were retroactively updated as new information became available.

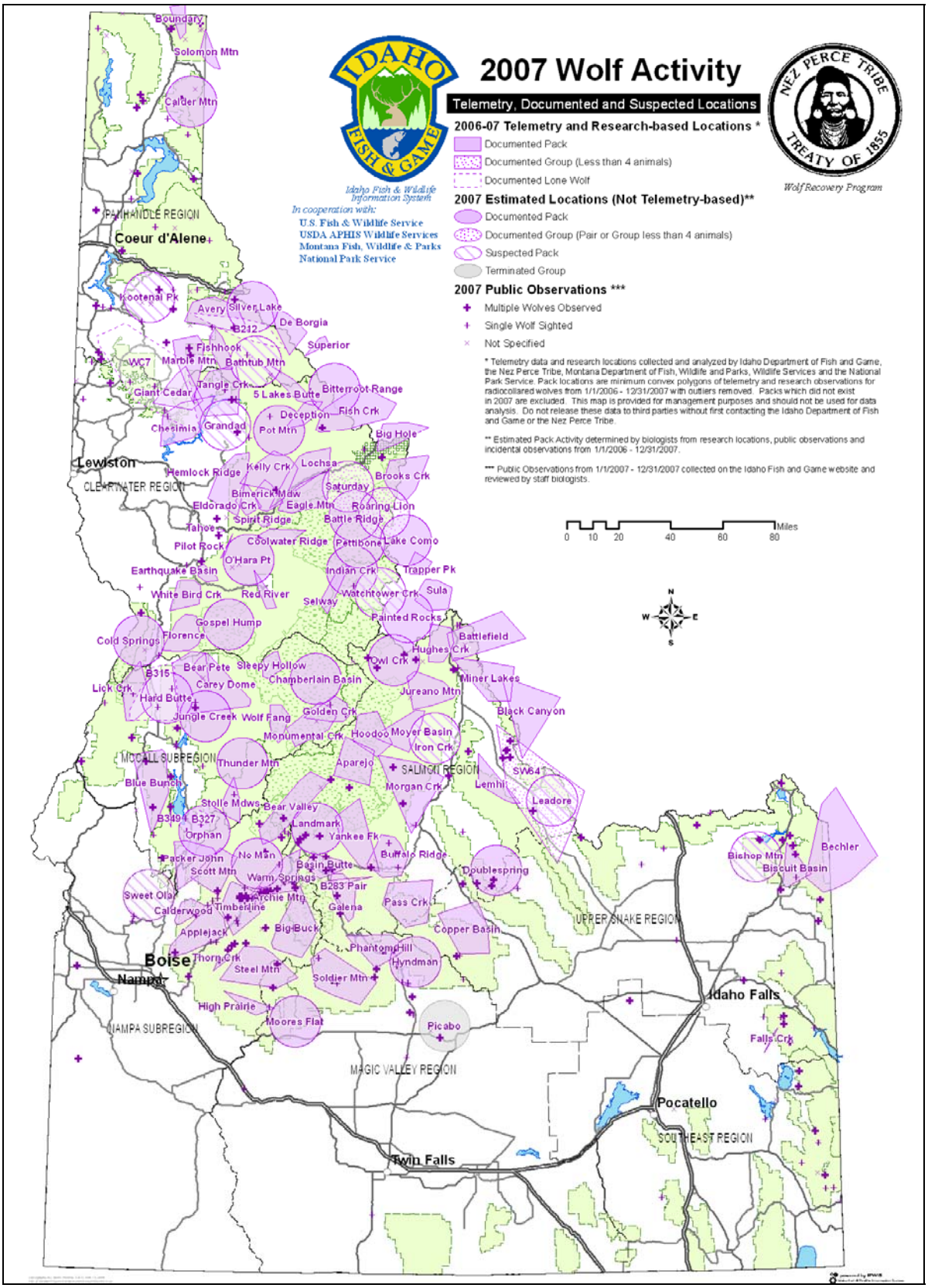

Figure 5. Distribution of documented and suspected wolf packs, other documented groups, and public wolf reports in Idaho, 2007.

Table 1. Number of wolves observed, documented packs, and other documented wolf groups; reproductive status; mortality; dispersal; monitoring status; and wolf-caused livestock depredations within Idaho Department of Fish and Game management regions, 2007.

	Management Region								
	Panhandle	Clearwater	McCall	Nampa	Magic Valley	Southeast	Upper Snake	Salmon	Total
Minimum number wolves detected[a]	37	148	84	85	9	0	10	116	489
Documented packs									
No. packs beginning of year[b]	8	26	14	13	4	0	3	15	83
No. packs removed[b]	0	0	0	0	0	0	0	0	0
No. packs end of year	8	26	14	13	4	0	3	15	83
Other documented groups[c]									
No. other groups beginning of year[c]	3	5	4	1	1	0	1	6	21
No. other groups removed[c]	0	0	0	0	1	0	0	1	2
No. other groups end of year	3	5	4	1	0	0	1	5	19
Reproductive status									
Minimum no. pups produced	5(1)	72	40	32	9(5)	0	3	39(1)	200(7)
No. reproductive packs	4	19	8	13	2	0	2	11	59
No. breeding pairs[d]	1	17	7	8	1	0	1	8	43
Documented mortalities									
Natural	0	2	0	0	0	0	0	0	2
Control[e]	0	3	10	5	12	0	8	12	50
Other human-caused[f]	3	5	2	1	0	0	1	6	18
Unknown	2	4	1	0	0	0	1	0	8
Known dispersal	2	0	0	2	0	0	0	1	5
Monitoring status									
Active radiocollars	7	30	14	13	3	0	3	16	86
No. wolf captures[g]	2	16	6	10	3	0	2	11	50
No. wolves missing[h]	1	2	0	2	1	0	0	5	11
Confirmed (probable) wolf-caused livestock losses									
Cattle	0	1(2)	8(2)	3	9(4)	0	14(5)	18(7)	53(20)
Sheep	0	0	60(3)	56(5)	41(7)	0	2	11	170(15)
Dogs	0	0	4(3)	(2)	3	0	1(1)	0	8(6)

[a] Number of wolves observed by wolf program personnel in 2007. Sum of this column does not equate to number of wolves estimated to be present in the population.

[b] Does not include documented packs removed due to lack of verified evidence for the preceding 2 years. Includes documented border packs tallied for Idaho.

[c] Other documented wolf groups include suspected packs and known and suspected mated pairs; verified groups of wolves that do not meet the definition of a documented pack.

[d] Breeding pairs are the measure of Federal and State wolf recovery and management goals. A breeding pair is defined as "an adult male and a female wolf that have produced at least 2 pups that survive until December 31 of the year of their birth…".

[e] Includes agency lethal control and legal take by landowners.

[f] Includes all other human-related deaths.

[g] Includes wolves captured for monitoring purposes during 2007. Most, but not all, were radiocollared.

[h] Radiocollared wolves that became missing in 2007.

Mortality

Seventy-eight documented wolf mortalities were recorded in 2007 (Table 1). Sixty-eight of the confirmed mortalities were human caused, eight were unknown, and two were natural. Of 68 confirmed human-caused mortalities, 43 wolves were controlled for livestock depredations by WS, nine were illegally taken, nine were from other human causes, and seven were legally taken (shot by landowners while harassing or attacking livestock). These figures are underestimates of the true amount of overall mortality occurring within the wolf population, as documenting mortalities of uncollared wolves that are not controlled by agencies is difficult. Only 2 wolf deaths due to natural causes were recorded, another indication that mortality was underestimated, as more individuals likely succumbed to non human-related factors. There were no means to estimate deaths of pups that occurred prior to our visits.

More wolves (n = 43) were lethally controlled by WS in Idaho in 2007 than in any previous year. This mortality stemmed from removals in 15 packs: the Buffalo Ridge pack (2 wolves) near Clayton, Idaho; the Carey Dome pack (2 wolves) north of McCall; the Copper Basin pack (6 wolves) northwest of Mackay, Idaho; the Falls Creek pack (1 wolf); the Galena pack (1 wolf) near Stanley, Idaho; the Hard Butte pack (1 wolf) northeast of New Meadows, Idaho; the High Prairie pack (2 wolves) near Prairie, Idaho; the Jungle Creek pack (4 wolves) north of McCall, Idaho; the Jureano Mountain pack (3 wolves) west of Salmon, Idaho; the Lemhi pack (1 wolf) northwest of Leadore, Idaho; the Moores Flat pack (9 wolves) south of Pine, Idaho; the Morgan Creek pack (2 wolves) northwest of Challis, Idaho; the Packer John pack (1 wolf) east of Smith's Ferry, Idaho; the Pilot Rock pack (1 wolf) east of Clearwater, Idaho; and the Steel Mountain pack (2 wolves) near Trinity Lakes, Idaho. An additional 5 wolves were lethally removed from paired or unknown groups of wolves. Finally, 7 wolves were taken in the act of attacking livestock on private property by landowners under the 10(j) Rule.

Livestock and Dog Mortalities

During 2007, WS conducted 127 depredation investigations involving reported wolf-killed livestock and dogs. Of those, 86 (68%) involved confirmed wolf depredations, 21 (17%) involved probable wolf depredations, 17 (13%) were possible/unknown wolf depredations, and 3 (2%) were due to causes other than wolves. During the calendar year, WS reported 73 cattle, 185 sheep, and 14 dogs that were classified as confirmed or probable wolf kills (Table 1). Non-lethal techniques were used where appropriate to reduce wolf-livestock conflicts.

Law Enforcement

During 2007, USFWS Special Agents and IDFG Conservation Officers cooperatively investigated and reported 38 incidents of known or suspected wolf mortalities. Of the 38 incidents investigated, 9 were illegally killed, 8 were legally killed, 1 died of natural causes, 5 from other human causes, and the cause of death for 9 was unknown. For the remaining 6 incidents, either a carcass could not be found or the report or incident was not wolf-related. The number of investigations detailed here represents a minimum, as some cases were still pending or undisclosed for investigative purposes and not reported in this text.

Research

Agencies continued to coordinate and support scientific research assisting in long-term wolf conservation and management.

Statewide Elk and Mule Deer Ecology Study

During 2007, the IDFG continued its effort to measure the effects of wolf predation, habitat condition, and forage nutrition on elk and mule deer populations across Idaho. Goals were met to radiocollar adult female elk and mule deer, 6-month-old elk calves and deer fawns, and newborn elk calves and deer fawns. Action is on-going to meet research objectives which include 1) determine survival, cause-specific mortality, pregnancy rates, and body condition for radiocollared animals; 2) monitor wolf distribution and abundance within project areas; 3) develop habitat condition and trend maps for Idaho; and 4) manipulate predator populations in project areas and monitor ungulate population responses. This research is providing contemporary estimates of non-hunting mortality, survival, and productivity of elk and deer populations for determining appropriate harvest levels. Further, this research will help identify and evaluate specific predator and habitat management actions necessary to achieve ungulate population objectives.

Developing Monitoring Protocols for the Long-term Conservation and Management of Gray Wolves in Idaho

Gray wolf recovery efforts in the northern Rocky Mountains (Idaho, Montana, and Wyoming) have met with much success, as all 3 states support wolf populations. Monitoring and estimating recovering wolf populations in the northern Rocky Mountains has, to date, relied on time-intensive and expensive radiotelemetry techniques. Although this approach worked well in Idaho with initial small population sizes, these techniques are no longer appropriate or cost-effective given the current, much larger recovered population size and nearly statewide distribution.

The NPT, University of Montana Cooperative Wildlife Research Unit, USFWS, IDFG, and the University of Idaho are collaborating on a multi-year research effort to develop less intensive and more cost-effective approaches for estimating wolf population numbers across the varied landscapes of Idaho. Primary funding for this effort was provided by USFWS through their Tribal Wildlife Grants Program. A 3.5-year research effort will develop standardized wolf monitoring protocols for estimating wolf population parameters appropriate for meeting post-delisting monitoring and management needs, help implement wolf management plans, address wolf management goals and objectives, and ensure long-term conservation and management of the species.

Research began in earnest in 2007 by mailing a hunter survey to 2,000 hunters across 4 study areas in Idaho. In the summer of 2007, field technicians conducted scat surveys at 480 sites in the 4 study areas and collected over 250 genetic samples without the aid of radiotelemetry. Genetic samples are currently being analyzed by the University of Idaho. In addition, project researchers have invented an automated remote sensing tool that broadcasts a howl, records responses, and then shuts down until the next scheduled broadcast. This remote sensing tool can be particularly useful for detecting wolves in roadless areas and will be tested on wolf packs in summer 2008. Data obtained from each of these methods are designed to be incorporated into a

statistical model (occupancy model) that will provide the framework for statewide population monitoring. Initial results from an occupancy model demonstrated promise for using this model to estimate wolf pack abundance. In part, due to these encouraging results, Montana Fish, Wildlife and Parks (MTFWP) is funding a graduate study to apply a similar occupancy model approach to use for wolf population monitoring in Montana.

Standardized monitoring protocols will be important in satisfying the USFWS' 5-year post-delisting monitoring requirements and will be crucial to ensure sustainability of the population through effective post-delisting conservation and management of wolves. Our results should be useful to other states developing monitoring protocols for wolves.

Outreach

Program personnel presented 46 information and education programs to a minimum of 1,876 people. Audiences included school students, agency personnel, livestock associations, community groups, sportsmen and outfitters, and legislators. In addition to organized presentations, program personnel talked to numerous members of the public via telephone, email, and in person. Also, news articles were often released by IDFG summarizing wolf-related livestock mortalities, as well as wolf mortalities and other noteworthy items about wolves on a weekly basis. Program personnel talked with reporters from across Idaho and the nation regularly. Wolves continued to be an interesting topic for the public and television, radio, and print media contacted the program leaders often to obtain wolf information and agency perspective. Thus, thousands more people were contacted regularly by program personnel about wolves through radio, television, and print media.

The IDFG online wolf reporting system provided an opportunity for the public and professionals to record wolf observations in Idaho. During 2007, 382 wolf observations were reported on the web site. The online reporting system is a tool which assists biologists in identifying areas of possible wolf activity and allows the public a means to communicate wolf concerns to the appropriate agency.

The Wolf Population Management Plan was submitted for public comment in December. At least 1 open house was held in each IDFG administrative region during November and December 2007, ten in all; 452 citizens listened to presentations and provided input on the plan. The public comment period that ended 31 December 2007 drew 1,287 comments from groups and individuals which were analyzed for content and opinion.